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Jane Hunter

Israeli Techno Crimes in the United States

Series Editors: Fouad Moughrabi and Elia Zureik

Occasional Paper No. 10

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Israeli Absorption of US Military Technology

In late 1985, a story about Israeli smuggling of classified military technology appeared on the evening news. More such stories would follow. Viewers who watched federal agents raiding factories and machine shops most likely wondered why Israel, which receives more US aid than any other country, would try to acquire one of the most prized weapons in the US arsenal of conventional weapons.

The television networks, oriented to the "big picture" and the fast once-over, have never considered it their business to provide the in-depth analysis that might have explained why Israel wanted a chrome gun barrel, a sophisticated aerial reconnaissance camera, and equipment to make cluster bombs--much less whether Israel's attempts to acquire these weapons were part of an Israeli pattern of behavior (they were, as the networks with their no-stint budgets would soon have discovered). The networks also neglected to ask why, if that was the case, the US government had not made sustained, visible efforts to confront the Israeli government and make it change its ways.

This is what the networks might have reported on their second night of coverage. For three decades the Israeli government has been systematically pursuing US military technology by lawful, questionable, and illegal means. Israel

has been implicated in the illegal export of weapons-grade uranium, nuclear weapons fuses, and, habitually, some of the smaller, less glamorous -- but no less essential -- bits and pieces that are indispensable for the modern arms industry, such as Israel's.

On the map Israel is a dot (albeit a strategically-placed dot) with a population of 4 million, smaller than that of some of the world's large cities. Israel's arms industry, however, is large, among the world's top dozen, and the third world's largest;[1] one-fifth of its industrial work force is employed in arms manufacturing.[2] Israel began seriously building weapons in the late 1960s, hoping to achieve self-sufficiency and thus invulnerability to the political pressures which might be exerted by governments on which it depended for arms.[3] These days, strength is determined by sophistication: the degree of advancement of its weapons in electronics, optics, and computer technology gives one army the advantage over another. Moreover, an important part of Israel's military doctrine is that Israeli weapons (and the techniques governing their use) must excel technologically those of surrounding Arab states to compensate for Israel's smaller population. In actuality, Israel is stronger than any possible combination of its potential enemies and enjoys the US government's commitment towards maintaing the Israeli "qualitative edge".[4]

Israel's frequent use of its weapons in war is often used as a selling point for the quality of those weapons: "An engineer here knows that what he produces, he or his son will fight with," said an official of Israel's largest arms company, Israeli Aircraft Industries.[5] And sell weapons Israel must. Its own military is able to absorb only about 40% of domestic arms production, and Israel exports the balance.[6] By extremely conservative estimates, these sales amount to over $1 billion a year.[7] According to the director-general of Israel's defense ministry (who would be expected to underestimate them), Israel's military exports for 1986 totaled $1.3 billion.[8] Israel's reliance on arms sales for 17%[9] of its total exports -- compared to 4.9% for France and 3.5% for Britain,[10] both of which are larger weapons producers and exporters than Israel -- attests to the centrality of the arms industry to Israel's economy. And in today's shrinking arms market, Israel, already hampered by a finite number of potential customers on account of its political isolation,[11] must remain technologically competitive.

The Quest for Technology

It has long been known that Israel conducts what a former Pentagon official terms a "conscious, assiduous and broadbased effort ... to acquire advanced military technology."[12] Why this should be -- when Israel has the largest number, per

capita, of scientists of any country in the world [13] -- is at least partly explained by the economics of cutting-edge technology, the development of which requires enormous capital and industrial bases. Small countries must make canny choices. For example, while over two hundred Israeli research scientists work on and follow the latest developments in superconductivity, Israel's top military electronics firms Tadiran and Elta have opted to wait until the field has developed to the point of applications: in other words, to "leave it to Japan and the US to do the inventing and we can take it from there."[14]

This is not precisely the impression that Israel might wish to convey. Shimon Peres, the architect in the 50s of Israel's technology acquisition program, frequently stresses that "Israel must enter the international scientific race equipped with a significant research and scientific effort."[15] Israel has done a great deal to sell itself abroad as a citadel of innovative high technology. But the entry to which Peres refers is a never-ending proposition; the speed with which technological milestones are superceded accelerates constantly. And there is considerable doubt as to whether the Israeli commitment (as distinct from the stated goal) is to broad technological development based on production of civilian as well as military products for export or is focused on military know-how with little reference to economic recovery.

Israeli leaders frequently speak of high technology as the path out of Israel's chronic economic difficulties and its dependence on the US. Dan Tolkowsky, managing director of the Discount Investment Corporation and an advocate for the Israeli private sector, says: "By encouraging technological innovation we can create new products and develop export markets in developed countries. We can, in effect, bring about symbiotic relationships with these countries, thus increasing the size of our small country and achieving critical economic mass, and bridging the distance that separates us from them."[16]

Yet behind the glittering facade of miracle weapons -- radars that can spot a rubber dinghy in a roiling sea, electronic warfare devices, exploding ("reactive") tank armor[17] -- lies a private sector that is in a state of near collapse. Unlike the large government-owned military companies, the 800 small, private firms in Israel's high tech sector have insufficient access to R&D funds and receive little economic consideration from the government.[18]

Comprising both military subcontractors and civilian-oriented development and manufacturing enterprises, this sector has been chronically undercapitalized; it has never thrived and has increasingly sought to raise capital in foreign markets. Four per cent of the high tech companies are

responsible for 71 per cent of Israel's high tech exports. In the military sector, Israel's expenditure on R&D (research and development) was six times that of France, while its outlay on civilian R&D (relative to GNP) was 0.65% compared to 1.2% in France and 2% in West Germany. Moreover, some of the larger firms have received government bail-outs to prevent mass layoffs, while export subsidies for the smaller companies have been slashed.[19]

This suggests that the government of Israel is not calculating the profits of its military industries in strictly profit-and-loss terms, but that it has construed the task of technology acquisition in strategic and political terms. It has been observed that, while the Israeli government finances up to half of the research and development costs for projects it deems in the national interest[20] and exercises tight control on weapons production of even the privately controlled firms, advocates of free market economics marvel that Israel has been able to develop and integrate new technologies with such "dynamism."[21] Could Israeli singlemindedness possibly accomplish the miracles held to be the exclusive province of the free market?

The Prime Source

In part the Israeli achievement might be ascribed to the

interlocking perceptions of threat and the need, enunciated after the Holocaust, for Jews to be militarily strong -- never again in a position of weakness. However, as the blessings of the free market rain most beneficently on those who leave the starting gate already blessed, a significant part of Israel's success in rising to the top echelon of third-world arms exporters must be attributed to its untrammeled access to US technology.

It is true that Israeli weapons are innovative, designed to be used.[22] Israel's mastery of advanced technology for electronic warfare -- "at least the qualitative equal, and possibly the superior of the US and the Soviet Union"[23] -- was demonstrated in its 1982 invasion of Lebanon. But a series of successful products has not added up to technological independence, much less to predominance in the international market.

Indeed, many of the weapons identified with Israeli ingenuity contain significant percentages of imported US technology -- an average of 35%, by US government reckoning. And "almost every Israeli arms production effort includes a US input."[24] The Israeli Shafrir air-to-air heat-seeking missile, is a copy of the US Raytheon AIM-9/DG (Sidewinder).[25] Israel's MAPATS missile is so like the US TOW missile that it can be fired from a TOW launcher. One Hughes Aircraft Co. executive

charged that "the Israelis took our TOW design and modified it, and [have] begun selling it."[26]

This adoptive process has been methodical and it has been going on for a number of years. During the 70s, when US arms exports were curtailed under the prevailing foreign policy, Israel struck deals with companies under which it had "the right to deny the vendors the right to sell the product to any country where Israel does not have a diplomatic staff." Such contracts sometimes included technology and equipment owned by the US government.[27] Israel has had access to US technology from the US corporations -- GTE, Motorola, Intel, Control Data, Gerber Scientific, United Technologies, Inc. -- which have established subsidiaries and joint ventures in Israel.[28]

Much of the "know-how" Israel has obtained from the US has been by dint of the political work of the Israeli government and its formidable domestic lobbying apparatus. A 1970 agreement, the Master Defense Development Data Exchange Agreement, established the basis for the transfer to Israel of US technology packages and the production of weapons systems in Israel under US license. A 1979 Memorandum of Agreement and a 1981 Memorandum of Understanding contain "a major US commitment to stimulate various types of cooperation in research and development and procurement and logistics support of selected defense equipment."[29] In 1981 an inter-agency

Defense Trade Task Force was established to facilitate, among other things, "technical data packages/commercial data transfers" and to develop "more liberal technology transfer guidelines for Israel."[30]

In 1987 Washington instituted new procedures streamlining the licensing of classified technology for export to Israel.[31] Now, according to a former White House military aid specialist, there is little supervision of how Israel spends its US military aid and of what technology it obtains.[32]

To all this, Congress has added its own largess. In 1979, breaking the established practice that required US military aid recipients to spend their aid on US products, Congress allowed Israel to spend $107 million on development of the Merkava tank in Israel.[33] This set the precedent for the earmarking of a total of almost $1.5 billion over a three-year period -- the bulk of it to be spent in Israel -- for the development of the Lavi aircraft. During negotiations with the US, as Israel wrestled over whether to abandon that project, among the incentives offered by Washington for giving up the costly aircraft project was increased earmarking of US military aid to be spent in Israel and Israeli participation in the development of an advanced US fighter aircraft. The Lavi had also been dependent on substantial transfers of US technology; about 40% of its components were contracted out to

US manufacturers.[34]

Yet another special concession to Israel is its right, under a 1983 executive order, to demand "offsets" from US military contractors on purchases made with US military credits. Offsets are reciprocal agreements written into weapons purchase contracts which require vendors to spend a percentage of the total contract in the buyer's country. The agreement can be fulfilled by buying products or hiring subcontractors from the buyer's country. Frequently, however, offsets involve granting the purchasing country the right to possession and reproduction of key technologies. Recently, voices have been raised in the US against the practice of granting offsets. Rep. John D. Dingell (D-MI) has termed it "de-industrializing the United States."[35]

As a subcontractor on the Reagan Administration's Space Defense Initiative (SDI), or Star Wars, Israel will earn foreign exchange, and at the same time gain access to some of the weapons systems developed under that massive program. Israel has also been afforded an institutional framework in which to cooperate with US scientists and entrepreneurs in the development and application of new technologies. This is done through the Binational Industrial Research and Development Fund (BIRD), an endowment fund modeled on an earlier (1972) endowment, the Binational Science Foundation, which currently

funds 300 mostly academic projects ranging from bird behavior to lasers and astrophysics.[36]

Self-financed by royalties on the products whose development it has funded, BIRD has enabled Israeli companies to engage in joint research with US firms. One example is the 1983 pairing of the Israeli company International Business Software Ltd with Martin Marietta for the transformation of an existing Martin Marietta line of software into microcomputer software called Unison. In 1986 another Israeli firm, On-Line Software International, Inc. bought elements of Martin Marietta Data Systems' software business, including the Unison line. BIRD's board of governors includes officials from the US Departments of Commerce, Treasury and State and Israel's chief scientist, and the director-general of the Israeli ministry of trade and industry.[37] The Israeli government has set up a similar program with the government of South Africa.[38]

US military producers have begun to complain about competition from Israel. If ever the Reagan Administration's military build-up is brought under control and the flow of funds that military contractors have received during the 1980s slackens, their complaints are likely to become more raucous. Harry Shaw, for 13 years a specialist in foreign military aid programs in the White House Office of Management and Budget, believes that "military aid to Israel has taken on a political

life of its own, unrelated to objective considerations of military need or sound budgeting . . . . Too generous US military aid is ... being used to subsidize the growth of Israel's ... defense industry, which can survive in the long run only by competing in the international arms market."[39]

To deflect criticism of Israel's prodigious absorption of US technology, Israelis argue that the US is a major beneficiary of Israeli research and development.[40] One Israeli expert claims that "as much as 70 per cent of high technology intelligence equipment developed in Israel is currently being used by the United States intelligence agencies."[41] Moreover, it is claimed that Israel's modifications to US weapons -- and its subsequent use of those weapons in battle -- has helped the US market those weapons to other nations.[42]

Nonetheless, US manufacturers complain that Israel competes with them (and often undersells them) in marketing weapons that incorporate US technology to third countries. (A future Democratic administration might also be troubled by Israel's choice of customers, which runs to such right-wing regimes as South Africa, Chile, and Taiwan.) On one recent occasion Washington took steps to prevent Israel from marketing devices based on US technology. In December 1986 Israel was forced to cancel the $2 million sale of 1,000

hand-made atomic oscillators (instruments used to build gauges for spacecraft and spy satellites) produced by a joint US-Israeli venture in Jerusalem.[43] But the overall trend seems to be toward further liberalization.

Israel Acquires US Ventures

In recent years Israel has begun setting up joint ventures in the US. While the ostensible motivation for such ventures is the ability to sell to the voracious Pentagon, another impetus is clearly the absorption of US military technology.

Initially these efforts at joint ventures met with a cool reception in Washington. In 1977 the Pentagon blocked a proposal by Sylvania Electronics Systems Group and the Israeli military electronics manufacturer Tadiran for joint development of sophisticated tactical military communications equipment. The US company Sylvania -- a subsidiary of General Telephone and Electronics, which also was part owner of Tadiran -- was to have done the classified work. With Sylvania claiming that Defense officials had told them "not to do business with Israel," several of Israel's key Congressional supporters took the issue up with President Carter, presenting a list of other Israeli projects that had been vetoed by Washington.[44] In subsequent years -- in the field of electronic intelligence systems alone -- Israel has enjoyed

cooperative arrangements with Boeing, RCA, Beechcraft, E-Systems, 21st Century Robotics and Sylvania.[45]

In 1981 Aryt Optronics Industries Ltd. acquired sophisticated diamond turning technology from Honeywell Electro- Optics, a subsidiary of the US corporation Honeywell. Diamond turning is a precision grinding process used for the production from exotic materials of non-spherical surfaces of components of optical elements for infrared and thermal imaging systems, laser- guided missiles, etc.[46] In 1982 Aryt bought the diamond turning operation from Honeywell. This formed the basis of Diamond Electro Optics, Inc., Aryt's US subsidiary, which produces specialized optical elements. In 1985 Ophir Optics Jerusalem Ltd., a firm in which Aryt has a 50.1% interest, in partnership with Diamond Electro Optics, established another US company, Diamond Ophir. Located in Massachusetts, Ophir specializes in coating optical elements. Aryt subsequently purchased 50% interest in a Swiss company, as well. However, a company officer describes the firm as still "essentially Israeli." It claims to be "the world's largest independent manufacturer of [diamond turned] optical elements."[47] In the US Diamond Electro Optics and Diamond Ophir sell to prime DOD contractors[48] -- and thus, in the course of their work, gain access to US weapons technology.

The Israeli firm Electro Optics Industries Ltd., more

commonly known as El-Op, a subsidiary of the major defense electronics firm Tadiran,[49] entered a joint venture with Varo Inc., a Texas defense contractor specializing in night vision and image intensification systems. The new company, Varo Electro Optics Inc., specializes in products that combine Israeli and US technologies: high performance lasers, rangefinders and designators, and thermal-imaging devices for night vision. The company chairman says that Israelis will be allowed to work on classified contracts but not in classified areas.[50]

Another example of this practice is the 1984 takeover of the Massachusetts company Inframetrics. Originally founded to design and build commercial infrared instruments based on its proprietary patents in scanning technology, in 1983 Inframetrics accepted Israeli financing for a study of the military applications of its technology. The Israeli company Elbit Computers, a leading military exporter, then bought 70 percent of Inframetrics' stock, paying $8 million for stock with an equity value of $1.4 million. By 1985 Elbit had reorganized Inframetrics; the company was producing military products for sale to the US and abroad.[51]

An even more clear-cut case of buying into a technological treasure trove was the purchase by Tadiran of Numax Electronics Inc, a Long Island, NY defense firm then making infrared sights

for the M-16 rifle and products that cannot be named because the Defense Department has classified them as secret. With the change to foreign ownership, DOD challenged Numax's security clearance. Tadiran hired Fried, Frank, Harris, Shriver and Jacobson, a highpowered Washington law firm, which appealed the challenge and won. Subsequent negotiations with DOD resulted in permission for Numax to "partition off" a classified project and allow only employees with security clearances to work on it. A longer-term partition arrangement was also reached with a board of directors constituted in two "insulated" halves: foreign and US. A Pentagon official said about this arrangement, "It's interesting that people even believe that can be done."[52]

Under Israeli ownership Numax's sales have risen by almost 70%. It has applied for US defense contracts of the highest order of secrecy which must be reviewed by the National Security Agency. The DOD won't even say whether the contracts have been awarded.[53]

Gray Areas

"Two sets of guidelines exist governing aid and access to US military technology: one for Israel, another for the rest of the world," wrote two Chicago Tribune reporters, summing up an exhaustive investigation of Israel's "deliberate campaign to

obtain vast amounts of restricted US military technology through legal channels and a clandestine network of agents."[54]

Between the legal and the criminal is what is tolerated -- specifically, the willingness of US authorities to "look the other way" and the rather permissive mores of the cutting-edge industries, made to order for the informal osmosis of technology.

For several years during the 1960s, the FBI and CIA investigated NUMEC, a uranium enrichment facility in Apollo, Pennsylvania where 200 pounds of the bomb-grade material had gone missing and whose owner, Zalman Shapiro, a physicist who had worked on the Manhattan Project, was believed by the CIA to have been set up in business by Israel.[55] FBI agents watched Shapiro meet at airports with Israeli science attachés and, in a 1968 document, listed the names of other Israeli defense ministry personnel who had asked to visit the plant and had met at Shapiro's house.[56] Although NUMEC was fined for "losing" the uranium, the Johnson, Nixon and Ford Administrations did nothing to pursue the case, despite the investigative agencies' belief that it was this enriched uranium which gave Israel the ability to build its first nuclear weapons.

> Nor was Shapiro impeded in his efforts as a high-powered head-hunter for the Israelis, travelling around the United States recruiting scientists of many disciplines, not simply those who were specialists in nuclear energy, to go and work in Israel.[57]

All three administrations -- and their successors -- simply found it too difficult to confront Israel in the context of an ever-deepening relationship. The Carter White House, for example, after a perfunctory investigation, declared a 1979 nuclear weapons test conducted by Israel and South Africa to be a "zoo event."[58] Whatever the geopolitical impulses of a given administration might have been, Israel's domestic political support system and its longtime intelligence relationship with the US seemed to immunize it against harsh US action.

> A senior Reagan administration official said disclosures of classified material to the Israelis have been commonplace for years. "Sure it's bothersome, and sure everyone knows it. But no one does anything about it. It is high politics."[59]

Scientists and engineers who work in Silicon Valley, California's high technology center, speak of the free and easy way in which knowledge is shared. One tells of an engineer who had worked on the NASA space shuttle who carried in his brief case some of the special tiles used on that aircraft. Another source said that details of classified projects are shared in casual telephone conversations. A personnel specialist who

places scientists in the microprocessor sector says that, despite the requirement of many firms working on US government projects that employees be US citizens, there are many Israelis working in -- at least -- close proximity to those projects. These Israelis, the specialist said, are "loyal," that is, not alienated from their government, and, presumably willing to serve it. Many of the children of these Silicon Valley engineers -- an officer of the local Jewish Community Federation puts their number at 100 (among them a second cousin of the late Moshe Dayan) return to Israel to do their military service.[60]

Also, according to a scientist who has been employed at establishments where classified work is carried out, many Silicon Valley employees have intelligence connections.

This privileged access to technology is not a new phenomenon. Dr. Yale Jay Lubkin, who boasts of creating the drone spy aircraft (mini-RPV), relates a tale of numerous comings and goings between Israel and the US in the early- and mid-70s.

> I went to Israel in 1970. In Holon, a job was awaiting me as Department Head of Intelligence and Acoustics at Eljim, a division of KMS Industries.... At the time, I was a Major in the US Army Security Agency Reserve and had a mobilization assignment as ASA liason [sic] to the National Security Agency.... Finally the [Israeli] Chief of Staff decided to allow me to

> come in and have a security clearance....
>
> By spring 1972, I had originated several interesting programs with the air force, intelligence and signal corps people, and I was running about 75 percent of Eljim's business. Then I told the security people that I was going to Germany for two weeks to do my annual reserve duty.

Eljim fired Lubkin, but the Ministries of Communications and Defense quickly hired him. Defense Minister Moshe Dayan gave him a security clearance and Lubkin tried to interest the Israeli Navy in remotely piloted vehicles.

> In the process of designing the plane I visited Wright-Patterson AFB and Johns Hopkins University. I received valuable design assistance from Don Lowe who had built some very good minis called the Teleplane. It is not coincidental that the Israel Aircraft Industries Scout bears a family relationship to the teleplane.
>
> I also borrowed from Maynard Hill, who had invented a clever scheme for stabilizing the aircraft in pitch and roll.... I was lucky to have bootlegged an internal Lockheed study on ducted fans (not from Lowe) on my information-gathering trip to the US.

During the trip, Lubkin explains, he was also trying to sell US officials on going into production of mini-RPVs. Failing that, he went back to Israel, put a letter in then Defense Minister Shimon Peres' mail box ("Imagine trying to do that with the US Secretary of Defense") and received Israeli backing for the project.[61] Israel has since set up a subsidiary of Mazlat,

Ltd. (itself a subsidiary of IAI), the AAI Corp in Baltimore, to market the pilotless drone to the US. (The administration tested the aircraft over Nicaragua in early 1987; launched from the USS Iowa, the drones all crashed.)[62]

The migration of so many top-flight Israeli scientists galled by working conditions in Israel -- 224 who held doctorates departed the country in the twelve months ending in June 1987, mostly for the US, to join an estimated total of 8,000 Israeli engineers [63] -- greatly concerns Israeli leaders, who regard new investment in the high-tech sector as crucial to luring these emigrants home again. As the government has not been supportive of the private high-tech sector, it must be assumed that Israel is looking to foreign investment to save the day. Israel offers a range of tax and credit concessions to foreign investors, but, except for a handful of US firms and regular investment from South Africa, a special case,[64] these do not seem to have been sufficient to overcome potential investors' skepticism of Israel's long-term economic viability. For now, however, "Hebrew has become the second language in ... Silicon Valley," and Israelis have not only found employment there, they have founded companies: Daisy systems, Simlong and Zoran.[65]

Although it is focused on the US, Israel's quest for technology -- overt and covert -- has not been limited to the

US. In 1967, according to one report, when Israel was still a favored arms recipient of France, Israeli scientists working at a Dassault plant on the MO-660 surface-to-surface missile (capable of carrying a 1,500-pound warhead 300 miles) stole the plans for the weapon.[66] After the relationship with France was over, the Israelis stole blueprints for the Mirage fighter aircraft from the French licensee in Switzerland.[67] In 1986 Trade and Industry Minister Ariel Sharon secured a commitment from his French counterpart that Israeli businesses would be permitted to participate in the Eureka program,[68] established by France as a European alternative to the US Space Defense Initiative (SDI), or Star Wars.

West Germany has financed joint FRG-Israeli science projects in the developing world.[69] Such projects, as well as a special program for joint Israeli scientific projects with developing nations funded by the US Agency for International Development, are probably more valuable to Israel for the political contacts they provide than access to technology.

More useful in terms of acquiring technology might be another US funded program, the US-Israel Binational Science Foundation. Israeli scientists have used some of the annual $7.5 million of the $100 million endowment established in 1974 by the foundation to initiate international workshops and seminars bringing together scientists from countries around the

world.[70]

Crossing the Line

US Intelligence sources -- not guaranteed free from hyperbole -- say that the Soviet Union employs 2,000 agents world wide in the acquisition of technology.[71] It is not known how many agents Israel uses in its similar quest, but in a 1979 report, the CIA identified the collection of scientific information as the third highest goal of Israel's external intelligence services.[72] In 1986, John Davitt, until 1980 head of the Justice Department's internal security section, told the Washington Post that Israeli intelligence services were "more active than anyone but the KGB" and were "targeted on the United States about half the time." Post reporter Charles Babcock learned from US intelligence officials that "they were aware of a number of cases of Israeli intelligence operations in the United States."[73]

Israel's New York Procurement Mission was identified by the report as an important center of such information gathering. According to Chicago Tribune reporters Douglas Frantz and James O'Shea, "the CIA report said Mossad agents used jobs in the Israeli purchasing mission as a cover for spying and to establish commercial companies for long-range penetration of specific fields of military technology and

science." The Procurement Mission has a staff of 200. The mission's above-ground work is to spend Israel's US military aid. In the course of this business, the procurement officers develop and maintain contacts with defense contractors and military installations.[74]

Israel has an advantage which the Soviets do not: "an unofficial network of sympathetic American officials who work in the Pentagon, State Department, congressional offices, the National Security Council and even the US intelligence agencies" who provide Israel with a "remarkable intelligence harvest."[75]

Israel has also been known to use science attachés at its embassies and consulates, and, as in the case of NUMEC, to develop business relationships with sympathetic individuals. One such sympathetic soul, Richard Smyth, quietly ran an Israeli supply operation for a decade, before he was indicted for smuggling 810 krytrons (timing devices for nuclear weapons) to Israel. Smyth made contact with Israeli arms dealer Arnon Milchan when he was working as an executive at North American Rockwell. He also, at one time, represented the Air Force at NATO headquarters in Brussels.

Smyth's business at Milco International, according to two former members of its board of directors, was mostly devoted to

"trying to buy equipment with military applications, including a uranium byproduct known as 'green salt' that can be processed into weapons-grade uranium, for the government of Israel." Smyth -- and his two board members -- had served on an Air Force advanced technology advisory panel requiring top-secret security clearances.[76]

It was never clear whether Milco was a subsidiary of another Milchan company or was owned by the notorious Israeli arms dealer, whose name the company name resembles. The treasurer of Milco told the Washington Post that Milchan "had an arrangement under which he and the firm shared in the profits from export sales that he arranged" and that the krytron deal was one such transaction.[77]

Smyth did not appear for an August 1985 court appearance; rumors spread that he had been murdered or lost at sea. But in May 1986 he was encountered in Israel.[78] For several days the US put strong pressure on Israel, demanding, at one point, to inspect its nuclear facilities (Israel is not signatory to the Nuclear Nonproliferation Treaty) -- unless Israel could find some other way of accounting for all of the krytrons.[79] Defense Minister Rabin said Israel only had possession of 500.[80] But then, the incident receded, amidst reports that the State Department had been in communication with Israel on the matter for some time before it broke in the press, and,

although there had been past rebuffs from Israel, the US was satisfied with Israel's "cooperation" in its investigation.[81]

The krytron case had such serious overtones, especially when it became known that Israel was suspected of having reexported some of the fuses,[82] that cynics, perceiving no reaction on the part of the government, began to wonder if, where Israel was concerned, there was such a thing as a threshold, or a point of no return. The capture of Jonathan Jay Pollard just as he was making a dash for sanctuary in Israel's Washington Embassy -- and subsequent attempts by the Reagan Administration to downplay the situation -- brought a reiteration of that question.

On December 12, 1985 viewers of NBC's Nightly News saw US Customs Service agents raiding G&B Packing Co. Inc. in Bayonne, New Jersey, and Napco Inc. in Terryville, Connecticut. From the outside the plants looked just like nondescript industrial buildings in towns like Terryville all over the country. Inside there was not much more to see -- glimpses of documents, bulky men moving authoritatively. Yet the target of the raids -- the government of Israel -- the summoning of network reporters, the no-punches-pulled network broadcast, seemed to signal a new phase in US-Israeli relations. US authorities were making a high-profile attempt to expose and halt Israeli smuggling of classified technology!

The raids were timed to prevent the companies from shipping to Israel equipment and technology for a closely-guarded process for plating the interior of 120 mm. tank cannon barrels. In the affidavit it presented in support of its request for a search warrant, Customs stated its suspicions that the premises it wanted to enter would contain evidence that federal laws relating to conspiracy, theft of government property, unlawful exportation of defense articles, goods, technology or services had been broken.[83] According to Israeli statements made after the raid, Napco was to export an entire plant to chrome-plate cannon barrels to Israel and to pay for it with Israel's US military aid.[84]

Napco is a subsidiary of Thermo Electron Corporation of Waltham, Massachusetts, which acquired it in 1981 for $15 million. It specializes in electroplating and has had DOD contracts involving work on the M-1 tank.[85]

The Israeli effort to export the cannon barrel was discovered quite by accident. In October 1985, while making a routine visit to the Abernathy Lead Construction Co., Thomas Mahar, head of the Metal Processing Branch of the Watervliet Arsenal, a US Army research and manufacturing facility located outside Albany, New York, happened to see the unique anodes used in the cannon barrel plating process. An Abernathy

employee told Mahar that some of the anodes were being manufactured for the Arsenal, but others were for the Israeli government.

The Watervliet Arsenal developed the special electro-plating process, which enables the manufacturer to apply a uniform coat of chrome inside the 26 foot long barrel, thus extending the life of the gun from fifty rounds to 800 rounds. Old methods of plating cannon barrel interiors deposited the chrome unevenly, necessitating honing and polishing, and even then resulting in an inferior, less accurate product. The new technique (which also happens to be cheaper than the old method) relies on specially designed anodes and cathodes. The Arsenal is the only US manufacturer of cannon barrels. Thomas E. Fitzpatrick, Director of Operations at the Arsenal, told Customs agents that the plating process puts the US two to five years ahead of all other countries in the production of 120 mm. cannon barrels. Customs was told that the technological data related to the process "is maintained at the Arsenal on a restricted basis as proprietary information of the United States and is not disseminated or made available except to authorized individuals."[86]

The Department of Commerce and the State Department, which require licenses for exporting the cathode and anode and the technology for their fabrication, told Customs that no such

licenses had been issued.[87]

Thomas Mahar of the Arsenal learned from Abernathy that representatives of Israeli Military Industries and Napco, the Terryville, Connecticut company, had visited Abernathy in the Spring of 1985 and "authorized the construction of the anodes for shipment to Israel."[88] The Napco representatives said that IMI had learned of the cannon-barrel plating process (quite expeditiously, as work only began on the project in 1982) and also learned that Abernathy, in Eddystone, Pennsylvania, was the manufacturer of the anodes "at and with the consent of the Arsenal."[89]

Operations Director Fitzpatrick told the Customs Service that Israel had never been authorized to receive the Arsenal's proprietary information on the plating process and that no Israeli government representative had made an authorized visit to the Arsenal in the last ten years.[90] Nonetheless, spokesmen for Thermo Electron told journalist Claudia Wright that the technology was not classified and that the "Defense Department had approved Napco work on the Merkava tank to be funded by Foreign Military Sales (FMS) credits."[91] Later it would be determined that Napco had followed the instructions of Israeli MIlitary Industries and told the Commerce Department that the cannons were "hydraulic cylinders." On that basis the company had obtained a determination that no export license was

required.[92]

How had Israel learned of the cannon barrel plating technique? In January 1985 a maintenance crew of around 15 people began working on the pits containing the chromic acid for the plating process. The crew came from Napco.[93] Israel had previously approached two other companies which had worked on the construction of the Arsenal's chrome plating facility. In December 1984 it signed a contract with Napco.[94] According to a spokesperson at the Arsenal, Napco took over after another company was dismissed after having been discovered to be double-billing the government.[95] Napco's actual assignment at the arsenal was on another project -- the medium-tube chromeplating facility -- 60 to 80 feet from where the 120 mm cannon barrel plating took place.[96]

An Abernathy official showed Customs agents photocopies of sketches that had been made of the anode and cathode. The business card of David Drake, Sales Engineer, Thermo Electron Napco (sic) was superimposed on the sketches.[97] Blueprints made from the sketches were labeled "Napco, Inc., Thermo Electron, Anode Details for IMI" and "Napco, Inc., Thermo Electron Fixtures for IMI." The official said that Napco was to manufacture the cathodes.[98]

Blueprints for the anode and cathode were also in the

possession of Chester Precision Machine, Inc., of Chester, Pennsylvania, which had been subcontracted by Abernathy to do final machining on the anodes. In the spring of 1985 Chester was also invited to bid on an IMI contract to manufacture the cathodes, but its bid was later rejected as Napco ultimately decided to make the cathodes itself. The blueprints in Chester Precision's possession bore the identifying markings "Napco, Inc. Thermo Electron Anode Details for IMI" and "Napco Thermo Electron Fixture for IMI."[99]

From Chester the anodes were sent directly to the shippers, G&B Packing of Bayonne, New Jersey and Jan Packing of Dover, New Jersey. A Customs official identified G&B as "an export company specializing in the shipment of goods to the Government of Israel." This occurred during October and November 1985.[100] By the time Customs conducted their raids, these items were already in Israel, where the IMI chromeplating factory is now in operation.[101]

In Israel the government responded to the televised raids by insisting it had acted legally -- in fact, according to the Secretary of the Israeli Cabinet, the Cabinet ministers said "that an agreement was signed between the Israeli military industries and the American firm in December 1984 and that the US office of defense [sic] approved the acquisition of the plant by Israel with assistance fund money." The Israeli

defense ministry said that US authorities knew about the agreement and had approved it[102] -- and that they even had a document from DOD to prove it.[103] (That the document would refer to hydraulic cylinders, rather than cannon barrels, was, of course, not mentioned.)

Despite the embarrassing arrest the previous month of Jonathan Jay Pollard, a naval civilian intelligence analyst, on charges of spying for Israel, the Israeli government came out swinging on the issue of the cannon barrel plating process. It demanded an explanation from the US ambassador in Israel and, following a meeting of the Israeli ambassador in Washington with the State Department, the Israeli radio claimed that the State Department had said that "no Israeli official or agency was implicated in any illegal activity at this time." (This might be technically accurate, discounting the government connections of IMI, but countries are ordinarily held responsible for the actions of their cutouts.) Defense Minister Yitzhak Rabin later said that "in private, State Department people have made an apology."[104]

Concluding his statement, the Cabinet secretary said, "Israel acted legally and openly and the implication of Israel in the affair is cause for astonishment."[105] Israeli radio later explained that the Israeli government had decided to avoid what it considered at the time to be its greatest mistake

with the Pollard affair -- delay in issuing an official statement. In the Napco situation, said the radio, it was decided to unequivocally deny the report right away.[106] Israeli officials threatened to publish the documents they said they had from the Defense Department, unless the US moved promptly to exonerate Israel.[107]

The Israeli radio said that "the method used in the operation is astonishing since the participation of television crews in such investigations is unusual between friendly countries."[108] A senior Israeli official suggested that "pro-Arab elements" in the Reagan Administration were trying to scuttle attempts by Secretary of State George Shultz to put the Pollard affair to rest. "We know where these elements are," said the official. "They come and go with each new administration. Some are in the State Department, and some are in other departments. But their common objective is to change the special relationship between Israel and the United States."

There were other dark suggestions that the US was punishing Israel for the Pollard affair, or that the FBI, suffering the opprobrium of a rash of spy scandals, was scapegoating Israel.[109] Kenneth Bialkin, chairman of the Conference of Presidents of Major American Jewish Organizations, cited by a London Jewish newspaper as one of a

number of US Jewish leaders who saw the raid as part of a campaign of harassment against Israel, said that the harassing activities "are the initiative of individual organizations within the government and not the top level of the Administration."[110]

This was, undoubtedly, despite its hectoring tone, quite near the mark. In her study of Israeli scandals in the US in 1985 and 1986, Claudia Wright notes the growth of a strong, if silent, opposition to Administration favoritism toward Israel among middle-echelon officials in the federal bureaucracy. According to Wright, the arrest of Jonathan Jay Pollard in full view of television cameras had a powerful effect on some officials.

> The burst of media publicity the FBI had intentionally drawn on the Pollards arrest wasn't forgotten by other FBI agents, district attorneys, and customs agents whose investigations have identified much more than the theft of US intelligence that Pollard has been accused of. To government investigators, who have been ordered by their superiors to drop or close cases involving Israel, the lesson of the Pollard case seemed to be that if the television cameras were invited to photograph the arrest, then there was a chance, a slim one perhaps, that a public prosecution and trial might result.[111]

On November 24, 1987, Napco pleaded guilty to two felony charges of exporting military-related commodities to Israel in the US District Court for Northern New York in Albany. The

company paid penalties amounting to $750,000.[112]

While Napco counted its losses on the cannon barrel contract, the Israeli government ignored the implications of the case -- that "the US foreign aid program financed construction of a facility in Israel that is now using smuggled American technology," as the Washington Post summed it up -- and offered some interesting excuses. The Pentagon surely knew that the hydraulic cylinders were cannon barrels, said an Israeli Embassy spokesman. "No one was trying to hide anything."[113]

In Israel, officials reiterated their original claim, that they had Defense Department documents to prove they had not tricked the Pentagon. Explaining that the documents would "embarrass specific Pentagon officials with whom Israel has a continuing relationship," the officials declined to show them to the media. But they said they still expected DOD to back "the Israeli version," whatever the Department of Justice alleged.[114]

Bouncing Bomblets

Israel's next public brush with US technology export law was over a weapon far less abstract than the inside of a cannon barrel: the cluster bomb. This is a large bomb, weighing a

hundred pounds or more, containing about three hundred smaller bombs. On its way to the target, the large bomb bursts open scattering the "bomblets," or "grenades," over a large area. These explode on impact. The developer of an Israeli version of the weapon touts its ability to "produce hundreds of explosion centers in a large ground pattern, covering 50,000 sq. m." and cover up to 40 times more area than a regular bomb, thus, making it "cost effective."[115] Originally developed for anti-tank warfare, the high impact explosions of the bomblets inflict particularly severe injuries on the human body.

Ever since the US first provided Israel with these horrific weapons in 1973, controversy has accompanied Israel's use of them. Because the weapon is regarded as "inherently barbarous," from the first there were special restrictions governing its use. A 1976 agreement committed Israel to refrain from using cluster bombs against anything that was not a "fortified military target." In 1978, when the Israelis dropped many US-made cluster bombs on civilians in Lebanon, the Carter Administration tightened the rules under which they could be used. Israel agreed to use the weapons only if it was attacked "by two or more of the nations Israel fought in 1967 and 1973."[116] That (secret) agreement called for an end to all military exports to Israel if Israel was determined to have violated restrictions on the use of cluster bombs.

So in 1982, when Israel again used the weapons on civilians in Lebanon -- in 19 locations in West Beirut and 51 places in other parts of Lebanon [117] -- during its invasion of that country, the Reagan Administration initiated the process called for by the 1978 agreement. It notified Congress that a violation had occurred. But the Administration never took the second step of halting military exports. Instead, it says it imposed a continuing ban on the export of cluster bombs to Israel.[118] There have been highly credible reports, however, that the Administration, as part of its November 1983 strategic cooperation pact with Israel, again permitted shipments of the weapons.[119]

On July 8 search warrants were executed at two companies in Iowa and one in Pennsylvania. Records were seized. Officials said that they had subpoenaed records from 12 other companies and had also served subpoenas on eight Israelis employed at the New York Purchasing Mission. The affidavits outlining the reasons for obtaining the warrants were sealed.[120]

Customs officials said that they were investigating charges that representatives of the State-owned Israeli Military Industries (IMI) had been involved in an attempt to circumvent US laws by exporting to Israel machinery for manufacturing the bomblets, or grenades contained in cluster bombs. This time, CBS News was alerted to the story and

reported it that evening. The next day the newspapers reported that Israeli Ambassador Meir Rosenne had been called in to the State Department and told of the investigation.[121] According to Israeli radio, representatives of the FBI and federal prosecutors joined Assistant Secretary of State Richard Murphy at that meeting.[122]

The three named companies involved were the Vector Corp. in Marion Iowa, Bexco International in Cedar Rapids, and Assembly Machines Inc., in Erie, Pennsylvania. Vector, which was raided by about 25 armed Customs officers, makes rotary presses for loading and sealing pharmaceutical capsules, a technique which officials said was adaptable to packing explosives into cluster bomblets.[123] According to a Vector brochure, one of the company's machines is used in "ordnance" production.[124] Vector's treasurer is Donald Danforth, Jr., brother of Missouri Senator John Danforth.[125]

IMI officials had approached the company in late 1984 or early 1985 and said that they wanted to buy this technology. The Israelis also, according to US government sources, had persuaded Vector to delete words such as "grenade body" and "shaped charge" from the export license application.[126] It is not known whether Vector complied with the request, but the State Department did initially approve about half a dozen licenses related to the deal; it rejected several others. In

June, after the State Department was alerted by Customs that the licenses related to cluster bomb technology forbidden to Israel, the department's office of munitions control suspended the licenses.[127]

Assembly Machines Industries was approached by IMI officials at about the same time Vector was and invited to bid on Israeli-designed equipment to assemble parts. Having won the bid, Assembly Machines officials said, they had not applied for an export license, as the machinery was to be delivered to IMI in New York. Besides, IMI representatives had said they were in possession of the necessary export licenses. After the story broke the company learned from IMI that the licenses had been "temporarily suspended."[128] According to the New York Times, the equipment made by Assembly Machines was for assembling parts related to the cluster bomb's fuse.[129]

Bexco, a tiny company operating out of a private residence in Cedar Rapids said it was involved in "export management." The local radio station which obtained this information said that the company spokesperson refused to give her name.[130]

Once again there was a harsh response from Israel, which insisted (after an internal investigation) that everything it had done had been legal. This time the bitterest Israeli complaints were over the publicity given to the case. "When a

Government institution has a complaint against us, rather than starting a media campaign, the matter should be brought up in direct discussion between the two Governments," said Abba Eban, former ambassador to the Washington and the United Nations, who now chairs the Knesset's defense and foreign affairs committee.

Eban said the exposees in the US of Israel's activities had portrayed Israel "as a somewhat mysterious and powerful force subverting legal procedures in the United States." He argued that this picture was untrue, as the New York Procurement Mission was "pedantic" and absolutely adherent to the letter of the law. He said there was no need for the mission to be otherwise, as "happily, the US Administration is so confident about its relations with Israel that there is nothing essential for our security that it totally is out of our reach, provided that it conforms with American policies."[131]

On a popular television news program, the Israeli justice minister said that on a recent visit to the US he had noticed "an atmosphere of suspicion toward Israel ... in addition to the ambition of various prosecutors and investigators ... [which] breeds headlines, which in turn gives rise to more suspicion."[132] Another Israeli official pointed out that the leak came just as the Israeli chief of staff arrived in the US on an official visit.[133]

The Israelis were particularly bitter about what they perceived as the US failure to make good on an assurance -- given Ambassador Rosenne when he was called in to the State Department -- that no details of the investigation would be publicized until Israel had had a chance to put forward its side of the story.[134] The Israelis had not yet responded to a list of questions from US investigators handed to Prime Minister Peres on July 8 by US Ambassador Thomas Pickering.[135]

Israel's US lobbyists privately charged that middle-ranking Justice Department and Customs Service officials were "disclosing the investigations as part of an unauthorized vendetta against Israel."[136] US Jewish groups also protested the publicity.[137]

The New York Times assessed the situation:

> At no time in the history of the state of Israel have the United States authorities been investigating more visibly embarrassing cases involving charges of crimes by the Israeli government or its representatives.[138]

The Times reported the opinion of "observers" that the Napco, Pollard, and cluster bomb investigations "are a sign that the White House has failed to maintain discipline over the Government's law-enforcement agencies."[139] The Israelis

tried to persuade the US to "transfer the discussion ... from US courts to diplomatic channels" and to ensure that in the future "misunderstandings should be cleared up in diplomatic negotiations."[140] At one point they obtained an apology which an Israeli paper said was from the State Department, the Defense Department and the US Ambassador to Israel.[141] After the Israeli press report, an anonymous US official acknowledged that "The State Department expressed regret for apparently unauthorized disclosure of confidential information regarding an ongoing investigation."[142]

In a sardonic vein, Israeli columnist Zvi Barel challenged these protestations about "the 'infidelities' of little Miss Israel, the poor urchin taken under the wings of rich Uncle Sam," and the occasion each scandal provided for a rehash of previous incidents. While Barel wrote that the State Department had known of the cluster bomb investigation for 5 months prior to the leak and had not acted the part of a friend by tipping Israel off, he said the leak to CBS might have occurred simply because an official was in love with correspondent Rita Braver and wanted to win her favor with a scoop. He also noted that

> [W]e would not like the United States to export Israeli inventions to foreign countries without obtaining our permission.... I do not know whether we have ever caught the United States cheating, but the United States has definitely caught us cheating in one case and spying and

> perpetrating all sorts of actions whose nature has not yet been specified in another case .... the US Administration is kind enough not to interpret these actions as standard Israeli practice.[143]

The Jerusalem Post took a different view: in an editorial the paper agreed that the publicity given to Israel might be inspired by an "anti-Israel animus," but it said that what was lacking was "a clear understanding of the rules of this game, and of where the borderline runs." The Post also argued that

> Israel is entitled to special consideration from the US, even to the extent of benignly overlooking borderline Israeli activities in America. At their worst, such activities are motivated not by hostility for the US but by Israel's crying needs, which cannot uniformly be met through resort to the formal channels of US assistance.[144]

As in the cannon barrel case, the government of Israel contended that its actions had been legal. It said it had been producing cluster bombs in Israel and only "wanted to procure in the United States equipment that would allow for more efficient production of the weapon." The Defense Ministry said that the machinery was not classified and could have been purchased anywhere in the world.[145] The reason for buying it in the US, according to Defense Minister Yitzhak Rabin, was to be able to finance the purchase with US military aid. Israel has been producing its own cluster bombs at least since 1981.[146] It began testing its version of the weapon in

1982.[147] Israel also exports the weapons. As early October 1983, the Age of Melbourne, Australia, reported that the Indonesian military was dropping TAL-1 cluster bombs on East Timor.[148]

At the time the Vector case broke, the German armsmaker, Rheinmetall, as negotiating to sell the FRG armed forces its own shell filled with Israeli bomblets. Israel said it had already sold Rheinmetall the technology. This particular model cluster bomb is made to be fired from a howitzer. At the same time Israel was trying to sell its TAL-2 cluster bomb, designed to be dropped from aircraft, to the US, or to enter into joint development with Washington. According to the Israeli weapons development authority Rafael, US officials had been shown Israeli work on the cluster bomb.[149]

In 1987 South Africa's state-owned arms industry Armscor advertised for foreign sale a "bouncing bomblet," which, the company said, had been tested "in action, internationally." "One may take this to refer to various excursions to South Africa's unfortunate neighbors," remarked the Independent of London. The paper mocked Armscor's euphemism for what was "in reality a cluster bomb with no known endearing characteristics."[150]

Of more practical -- indeed, urgent -- concern to the

Israelis were the subpoenas served on the eight indicted employees of its New York Purchasing Mission. Israel began to demand that the US give them ex post facto diplomatic status [151] and said they would not cooperate in the investigation until the summonses were withdrawn.[152] Menahem Meron, who had just retired from the post of Director-General of the Israeli Defense Ministry, said that while he held that office the State Department and the Israeli Foreign Ministry had agreed that these Defense Ministry employees would be given diplomatic status.[153] The Israeli military radio said that talks had been proceeding on that issue but had been suspended when the cluster bomb affair broke.[154]

Agreement was elusive, but Israeli officials stubbornly refused to allow the procurement officials to answer the summonses. Officials said they did not want to set a precedent. (This position would stand Israel in good stead during the 1987 Iran-contra investigations, buttressing its case against making Israeli officials answerable to US subpoenas.)

At the end of July Israeli representatives met with the head of the Justice Department's criminal division, Stephen Trott, and protested the subpoenas "vigorously."[155] On August 4 there was still no agreement. That day Israel's top three leaders -- then Prime Minister Shimon Peres, then Deputy Prime

Minister Yitzhak Shamir, and Defense Minister Yitzhak Rabin -- met; they did not deny that the subject under consideration had been the cluster bomb case.[156]

On August 5, the day before they were to testify before a grand jury, the Justice Department withdrew the subpoenas against the eight, "without prejudice in return for pledges of cooperation by the Government of Israel," according to Trott. Customs, which had not been consulted about the deal, expressed concern.[157]

Israel's credibility had just taken a severe knock with the discovery that Brig. Gen. Aviem Sella had been a key player in the Pollard affair. The Israelis had pledged full cooperation with the Administration's investigation of the affair, but they had deliberately concealed Sella's involvement from an investigative team that had traveled to Israel the previous winter. It would later turn out that Israel only turned over to the US a tiny fraction of the thousands of classified documents it received from Pollard.

To obtain the withdrawal of the subpoenas, the Israelis worked through the State Department's Office of Legal Counsel,[158] headed by Judge Abraham Sofaer, who had led the US team that investigated the Pollard affair in Israel. Sofaer's devotion to Israel is well known.

During the wrangling over the subpoenas Israel decided it wanted the US to buy back 4,000 cluster bombs it said it had purchased before the 1982 cutoff went into effect. The Israelis said they were paying storage fees for the weapons.[159]

Two weeks after the subpoenas were withdrawn, it became known that another grand jury investigation was on -- this one into the records of a San Diego machinery manufacturer, RISI Industries.

Several months earlier Israeli officials had approached RISI for help in setting up machinery to make "grenades similar to those used in cluster bombs." RISI was raided by Customs officials after a Los Angeles restaurant alerted authorities that customers had inadvertently left behind a sample grenade. The customers turned out to have been from RISI and Israeli Military Industries. RISI said it had signed no contract with Israel.[160]

US Customs Pubic Affairs Officer David Hoover said that investigations into the cluster bomb case were continuing--under a seal of secrecy.[161]

Recon: Spying on the Spy Camera Maker

In its dealings with Recon/Optical Inc. Israel used the offset advantage (see above) for more than its ostensible purpose of generating income. In August 1986 officials of the Barrington, Illinois company accused Israel of using a subcontracting arrangement to purloin the technology for a sophisticated aerial reconnaissance system with the intention of producing and marketing the system in direct competition with Recon.

Recon makes optical lens equipment; its specialty is surveillance equipment and it is the leading supplier of aerial reconnaissance systems for the US armed forces.[162]

In its efforts to submit the winning bid, Recon offered to subcontract 40% -- $16 million -- of the work to Israeli firms. Had it not done so, the company maintained, Recon probably would not have won the bid. The Israeli subcontractors included Bedek, the maintenance and overhaul division of the state-owned IAI.[163]

After months of feuding with Israel over costly changes it wanted in the sky camera, Recon terminated the contract in May 1986, and two months later filed a civil suit in Federal District Court in Manhattan, charging breach of contract and

nonpayment of bills. On May 27 Recon security officers stopped three Israeli air force officers as they were leaving the plant. They took 50,000 pages of documents from the Israelis. As a government contractor engaged in classified work, Recon was entitled to search people leaving its premises. With the contract suspended, the Israelis were no longer entitled to be at the plant.[164]

What the Israelis were trying to take has been called "the most sophisticated aerial reconnaissance system to date"--a sky- borne camera "capable of photographing a man smoking a cigarette 100 miles away"[165] without exposing the spyplane to hostile fire. The process is called long range oblique photography. For Israel, a hundred-mile circumference encompasses Lebanon and Jordan and portions of Syria, Iraq and Saudi Arabia. Recon was developing the kitchen-table-sized camera for Israel. The $40 million contract called for two cameras and one ground station. (The pictures are instantly transmitted to this station, which in turn can rapidly transmit them to commanders in the field.)

Originally the company's aim was to get Israel to pay part of a $60-plus million cost overrun (an amount that would have come out of Israel's US military aid).[166] When, in the process of researching the suit, the company learned from translations of documents taken from the Israelis that Israel had been

exporting highly classified technical information, the suit was amended, with filings on July 23 of an affidavit and samples of translated documents. In response to Recon's charge that "undercover agents from Israel had infiltrated the plant," and had sent technological information to Israel, a federal investigation was launched.[167]

In its lawsuit Recon asserts that Israel intended from the start to steal the technology and to have the El-Op company (see above) produce the sky camera in Israel. A late 1985 document written by one of the Israeli officers stationed at Recon said it had been "principally agreed to transfer ... information from the air force to El Op through the air force command and under its inspection."[168]

El-Op is already engaged in developing reconnaissance systems for domestic use and for export to Israel's clients -- South Africa and others. Recon's court papers stated that the Israeli officers had been providing technical information to El-Op and had even been complying with requests from the Israeli company to ferret out specific bits of information. Moreover, according to the company, in February 1986 an El-Op employee masquerading as an Israeli Air Force officer had visited the plant to evaluate and discuss the project. And Recon gleaned from the confiscated Israeli documents that Israel intended to have an undercover El-Op man working

permanently at the plant.[169]

Whether intentional or not, the effect of the intended theft would have been magnified by the financial losses the Israeli contract inflicted on Recon. The Israelis kept requesting changes in the system and making "impossible" demands on Recon. The $40 million contract was beginning to look like a $100 million project -- one which might be Recon's last. It was this concern over the financial soundness of the company that caused Recon to try to end the contract, first by arbitration (unavailing in the face of Israeli arguments that Recon's original bid was too low) and then with the lawsuit filed May 27. That Israeli officials also confided that their performance specifications were impossible to meet [170] suggests that Israel might have been trying to cripple Recon as a future competitor for the Recon camera they planned to market. The company president said as much:

> The Government of Israel intended to remove as much sensitive data as it could, while forcing Recon into an untenable financial position, eventually leaving us unable to perform, at which point the Government of Israel would declare us in default ... at that point the Government of Israel would have obtained our technology and transferred it to an Israeli company prepared to use it in production, all at no cost to the Government of Israel.[171]

One of the documents translated from the Hebrew original by Recon discusses Israeli plans to invite bogus contract

proposals from Recon for the purpose of learning details of its next generation of reconnaissance systems.[172]

Company officials noted that the technology for the reconnaissance system could not have been determined by reverse engineering (taking equipment apart to observe its components and workings).[173]

The Reagan Administration's response appears to have been ambivalent. When the story broke in August 1986, the government acknowledged that a preliminary investigation had been launched by the Justice Department and the Customs Service, spurred by (as the New York Times put it, "the sensitive nature of Israeli-American relations on security issues." Federal officials said that Israel might have stayed within the law while "trying to gain more from the contract than Recon wanted to provide" -- "Instead of trying to settle just for the product, they were trying to take the technology, too," was how a Customs official phrased it. But at the same time a Justice spokesperson said that Israel's licenses were in order. In June 1986 Recon appealed to Illinois Sen. Alan Dixon.[174]

An Israeli paper, Davar, had the story a month before it was picked up in the US. (For reasons of security Recon's court papers had initially been filed under pseudonyms for both the

company and the Israeli government.) The paper reported that Recon was hoping that Sen. Dixon would be able to persuade the Pentagon to take its side against Israel. Davar's July article also suggested that Recon (and other companies -- Kaiser, Norden [sic] and Loral were named in the article) was taking advantage of "the prevailing mood among the community of American 'defense' firms" to squeeze Israel for additional payments. The Israeli press would continue to make these charges.[175]

The Israeli government fought back. An official statement accused Recon of making "a desperate attempt to influence a commercial contract dispute with wild media allegations."[176] Israel tried to force Recon to turn over the equipment called for under the contract.[177] A New York attorney representing Israel said that under its contract with Recon, Israel was also entitled to the technology for the reconnaissance system[178] and that the air force officers were entitled to the documents which Recon officials had confiscated.

Recon's position was that Israel had State Department licenses to export the equipment but that the sophisticated technology belonged to Recon, which had developed it at its own expense. This technology, they added, was not allowed in any event to be exported from the US -- by anyone.[179] The export license issued for the equipment also forbid Israel from

exporting the system to a third country.[180]

In a move probably calculated to pressure the US government to take its part, or at least remain neutral, the Israel radio said that State Department officials had told Israel's Washington embassy that the government was not "politically involved" in investigating the charges. The radio also quoted Israel's defense ministry saying that Recon was "spread[ing] false rumors."[181]

In September 1986 a federal judge in Chicago rejected a number of Recon claims relating to the contract and refused to enjoin Israel from drawing down a $20 million letter of credit. The judge refused to consider as relevant to the matters at hand Recon's charges of espionage, which were offered to prove that Israel had "unclean hands."[182] In late 1987 attorneys for Recon said the case was in arbitration and under seal.

Giving the lie to Abba Eban's description of the work of the Procurement Mission as "pedantic," on August 23 Ronen Tidhar, a purchasing agent for the Mission, and a companion were arrested on the roof of the Valley Stream, Long Island (New York) building housing the Bigger Byte Computer Co. and Relli Technology. They were charged with attempted burglary, but an investigation (of which the FBI was aware, if not involved in) into the possibility of industrial espionage was

begun.

Relli's president, Reuven Ginton, worked for the Israeli Ministry of Defense between 1970 and 1976. It had recently been "monitored by the US Customs Service,"[183] which had arrested a number of Israelis in 1986 in connection with attempted arms sales to Iran.

William Longfellow, the man arrested with Tidhar, owns Ohio Western World Transformers, whose military aircraft transformers are sold to the US and Israel.

The week of their arrest, a spokesman at Israel's consulate in New York said that whatever Tidhar did, "he did it in his own private time, as a private matter, and the government of Israel was not and could not be involved in such a matter."[184] Nonetheless, said consulate spokesman Barukh Binah, Israel was going to fire Tidhar: "He put us in some sort of trouble, and there is no way he can work for us anyway more.... This could cause damage to our image."[185]

Although Israel said that Tidhar had been hired in New York as a student for a low-level job at the Purchasing Mission, Immigration Service officials wanted to question him about his 14-year visa of a type "used by foreign government officials, diplomats, or members of their families." Officials

were also checking on Tidhar's claim of student status, after Hunter College in New York said he had not been enrolled there since 1985.

Tidhar and Longfellow were convicted on their own guilty pleas on charges of second-degree criminal trespass and sentenced on April 8, 1987 to 12 month jail terms -- with an immediate "conditional discharge" -- fined $500 and ordered to perform 250 hours of community service.[186]

As to the other three cases, US Customs Public Affairs Officer David Hoover said that investigations into all of them were continuing -- under a seal of secrecy.[187]

Endnotes

1. SIPRI (Stockholm International Peace Research Institute), Arms Production in the Third World 1986, p. 10, cited by Sheila Ryan, "US Military Contractors in Israel," Middle East Report, January-February 1987.

2. Aaron Klieman, Israel's Global Reach: Arms Sales as Diplomacy (Washington: Pergamon-Brassey, 1985), 57.

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7. Klieman, op. cit. 63 and passim. The Israeli government closely guards such statistics, but many believe that Israel's total annual sales amount to over $2 billion. A figure of around $1.5 billion is probably a conservative estimate.

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9. "Military Exports 1972-1982," table compiled from statistics from Israeli Ministry of Trade and Industry and Maarakhot, the Israeli Defense Forces Monthly, by Yoram Peri and Amnon Neubach, The Military-Industrial Complex in Israel (Tel Aviv: International Center for Peace in the Middle East, January 1985) 69.

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Peri and Neubach use very low figures (under $1 billion) for Israeli arms exports and still show a figure of 16% for 1983; Klieman (who is somewhat less critical of the Israeli arms export program) gives a figure of 10% for 1982 (p. 65).

11. Because Israel cannot sell its arms to the East Bloc and socialist nations, and not in great quantities to the NATO countries, its clients are largely concentrated on the right end of the political spectrum: South Africa, Guatemala, Chile, Zaire, etc.

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